

EV549896697

UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No.: 09/746,924
Filing Date: December 22, 2000
Inventors: Parupudi, et al.
Appellant: Microsoft Corporation
Group Art Unit: 2173
Examiner: N. Pillai
Confirmation No.: 3998
Attorney's Docket No.: MS1-696US
Title: Environment-Interactive Context-Aware Devices and Methods

REPLY BRIEF

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Sir:

In response to Examiner's Answer mailed April 25, 2005, in connection with Appellant's Appeal Brief filed July 19, 2004, a Reply Brief is submitted. Favorable consideration is respectfully requested.

Claims 2-7, 9-21, 23-30, 32-36, 38, 39, 41-46, and 48 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dowling, et al. (U.S. Patent No. 6,522,875, hereafter “Dowling”) and Goldman (U.S. Patent No. 6,343,291, hereafter “Goldman”).

Claims 22 and 37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dowling and Goldman and further in view of a publication entitled “Computer Maintenance, Part 1 First Step: Spring Cleaning” (hereafter “Fulton”).

Appellant submits that the requirements for establishing a *prima facie* case of obviousness have not all been met in the final rejection from which an appeal has been made, or in the Examiner’s Answer to which this Reply responds.

With regard to establishing a *prima facie* case of obviousness, MPEP §2143 instructs as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Appellant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 2 recites a method comprising:

- determining a location of the portable computing device by accessing one or more hierarchical tree structures each of which comprising multiple nodes that represent physical or logical locations; and traversing at least one node on the one or more hierarchical tree structures to ascertain a device location;
- acquiring digital data associated with the determined location and that can permit the portable computing device to interact with a location environment; and
- interacting with the location environment based, at least in part, on the acquired digital data.

The Office argues, in finally rejecting Claim 2, that Dowling discloses the subject matter of the claim, except that “Dowling does not disclose that its databases are hierarchical tree structures, wherein nodes would be traversed to access the information concerning the device location...” (Office Action, page 2). The Office then argues that Goldman discloses “creating and using an organized hierarchical structure with nodes representing location based information, wherein the tree would be traversed to access a specific node containing information that is needed.” The Office then argues that it would be obvious to incorporate Goldman’s teaching in Dowling’s system to render the claimed subject matter obvious since Dowling discloses using “some kind of database storage structure” (Office Action, page 3) and that Goldman teaches taking a database and using a hierarchical structure to provide a better organized structure where information can be easily accessed.

In its Appeal Brief, filed July 19, 2004, Appellant respectfully disagreed with the interpretation and application of the references set forth in the rejection, and further submitted that the rejection fails to establish a *prima facie* case of

obviousness. Specifically, Appellant submitted that the Office's stated motivation to combine the references was deficient and that the references do not teach or suggest all of the claim's features. Appellant maintains its position.

In the Examiner's Answer, mailed April 28, 2005, the Office maintains its rejection and responds to Appellant's arguments by further characterizing Dowling and Goldman. Specifically, regarding Dowling, the Office argues that the only feature not taught is "the backend structure of the database". The Office then argues that Goldman discloses a hierarchical data structure with multiple nodes that represent physical or logical locations. The Office then states: "Goldman further discloses that this database mechanism is created and a data model is formed to organize data, wherein this organization would be beneficial to such a system as Dowling that deals with large amounts of data." The Office then refers to Figure 37 and column 38, lines 30-60, of Goldman and argues that the embodiment illustrated and described therein "clearly shows how this hierarchical tree structure stores physical or logical location nodes, and this tree would be traversed to access these location and location data."

The Office then refers to column 41, lines 34-35, which states "[t]he result of an information model is both an easy way to organize and access an information repository." The Office relies on this statement as motivation to combine Goldman with Dowling by arguing "Goldman is beneficial for creating a information model that is both an easy way to organize and access an information repository, wherein this is clearly a motivation that such a system as Dowling with large amounts of data can rely on to implement Goldman's data structure." The Office further suggests that Figure 37 and column 38 illustrate

how Goldman uses its data structure “to lay out an example much like Dowling’s system, by explaining how this data structure can be used to hold hierarchical location nodes that can be traversed to extract specific node information based on location of a device” (the Office offers no support for the alleged similarity of this example to the Dowling system). The Office then reasons that “[s]uch a clear layout, along with proper motivation for creating a better efficient data structure would make for the combination of Dowling and Goldman to be valid and based on adequate motivation.”

Appellant respectfully disagrees with the Examiner’s Answer and reminds the Office that, as noted above, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Here, Dowling and Goldman contain no such suggestion or motivation. Furthermore, the Office bears the burden of explaining “why the combination of the teachings is proper.” (MPEP 2142). Here, the Office’s only attempt at such an explanation is to state that Dowling discloses using “some kind of database storage structure to store and access the information necessary to access and display the service information to a user.” The Office then suggests that Goldman teaches using a hierarchical structure on such a database “wherein this hierarchical structure would provide a *better-organized structure*, with a *meaningful organizational method*, wherein the information can be traversed more *efficiently* and the information can be easily accessed (column 5, lines 37-40).” (emphasis added).

Appellant submits that, upon close examination, the Office's stated motivation merely involves improving *efficiency*, which is too general because it could cover almost any alteration to any database (e.g. implementing relational tables, increasing available memory or processing resources, using SQL or creating a look-up table). Additionally, providing a "*better-organized structure*" with a "*meaningful organizational method*" is too general because databases themselves are meaningful organizational methods and are commonly defined as "a collection of data arranged for ease and speed of retrieval, as by a computer." (Webster's II Dictionary, 1988).

Furthermore, the stated motivation merely recites portions of the Goldman disclosure and fails to explain *why* the combination is proper (the Office expressly cites column 5, lines 37-40, of Goldman).

The Office itself has provided guidance that describes proper and improper rejections made under § 103(a). This guidance is in the form of a paper available at the following link:

<http://www.uspto.gov/web/menu/busmethp/busmeth103rej.htm>

Particularly instructive in this instance are portions that appear in Sections IV and V of the paper which provide guidance with regard to communicating a proper §103(a) rejection. Section IV discusses communicating the rationale for a proper §103(a) rejection - and addresses *reciting prior art* as the motivation. Section V illustrates an improper §103(a) rejection which is based upon hindsight in view of a general motivation statement - and specifically addresses

the motivation of *efficiency*. The pertinent parts of this paper are reproduced below for the Office's convenience:

IV. Communicating the Rationale for a Proper Rejection under 35 U.S.C. 103

When an examiner rejects a claim as failing to meet one or more of the statutory requirements for patentability, administrative due process and 35 U. S.C. 132 require that applicant be adequately notified of the reasons for the rejection of the claim so that applicant can decide how to proceed. The statutory requirement that an Office action state the reasons for any rejection is critical to proper action taking.

In writing a rejection under 35 U.S.C. 103, the examiner should appropriately communicate:

- (1) the particular part of a reference being relied upon should be designated as nearly as practicable; 37 CFR § 1.104(c)(2);
- (2) the differences between the claimed invention and the closest prior art;
- (3) where the differences are found or suggested in the prior art;
- (4) how the teachings of the prior art are combined; and
- (5) ***why the combination of those teachings would have been obvious to one of ordinary skill in the art at the time the invention was made. Do not recite the disclosure of the prior art which reads on the claimed invention as the motivation. Communicate why the references themselves, the knowledge of one of ordinary skill in the art, or the nature of the problem to be solved establishes a motivation to combine the prior art references.***

Once applicant has presented rebuttal evidence, examiners should reconsider any initial obviousness determination in view of the entire record. All the proposed rejections and their bases should be reviewed to confirm their correctness. Only then should any rejection be imposed in an Office action. The Office action should clearly communicate the Office's findings and conclusions, articulating how the conclusions are supported by the findings.

V. Examples of Improper Rejection under 35 U.S.C. 103

Example 17: Improper rejection based upon hindsight - general motivation statement.

a. The claimed invention

The invention is drawn to a smart card containing a tracking mechanism, which tracks shopping preferences of consumers by recording the type, quantity, and dates of purchase for a pre-selected group of products. The smart card is useful in a system and method for introducing new and alternative products that are of the same type as products normally purchased by the shopper. The smart card records the shopper's purchases and submits an automatic notification to the shopper when a quantity threshold is achieved for the pre-selected products. This notification will encourage the consumer to consider alternative products by providing the consumer incentives, such as a pricing discount, to purchase an alternative product.

Claim 1:

A method for using a smart card in a marketing analysis program designed to introduce new products, the method comprising the steps of:

storing product information on the smart card when said products are purchased by a consumer wherein said information including type, quantity and dates of the product purchased;

identifying for each product a threshold for each of said type, quantity and dates of products purchased;

determining an incentive for an alternative product based on said threshold; and

automatically notifying said consumer when said threshold is reached for a given product identified on the smart card and providing the consumer with said incentive, whereby the incentive encourages the consumer to consider alternative products.

b. Evidence

Reference A discloses smart card that tracks consumer preferences by recording the type, quantity, and dates of purchase of pre-selected products to determine trends in consumer purchases. The smart card is periodically read by a scanner to determine its contents for market analysis. In return for using the smart card and participating in the marketing program, the user is provided with free product coupons for products that are normally purchased by the shopper.

Reference B discloses a traditional consumer incentive program that provides coupons for the purchase of named products based upon the consumer's purchase of those same products to promote customer loyalty.

c. Poor statement of the rejection

Claim 1 is rejected under 35 U.S.C. 103 as being unpatentable over Reference A in view of Reference B. Reference A discloses the conventional use of a smart card to track consumer preferences and provide incentives. However, Reference A does not disclose the automatic notification to consumer providing incentives. Reference B discloses providing incentives to consumers to purchase the desired products. It would have been obvious to combine Reference A's smart card with Reference B's incentive to consumers because the combination would allow Reference A's smart card to be more *efficient*.

d. Analysis

The motivation, improve efficiency, is too general because it could cover almost any alteration contemplated of Reference A and does not address why this specific proposed modification would have been obvious.

Additionally, there is *nothing in either of references that would suggest* automatically notifying the consumer when reaching a threshold nor is there anything in either reference that would suggest the notifying step. Finally, although Reference B teaches a traditional coupon scheme to promote customer loyalty, there is no suggestion, other than applicant's disclosure, to employ this scheme to promote the introduction of new and alternative products. ***The rejection is improper.***

In the present case, as in the Office's own example above, the Office's stated motivation merely involves improving efficiency and recites the disclosure

of Goldman, without explaining why the combination of the teachings is proper. Accordingly, the Office has not established a *prima facie* case of obviousness.

In this regard and as pointed out above, on page 16 of the Examiner's Answer, the Office relies on efficiency and the disclosure of Goldman by stating: "**Goldman** is beneficial for creating a information model that is both an *easy way* to organize and access an information repository, wherein this is clearly a motivation that such a system as Dowling with large amounts of data can rely on to implement Goldman's data structure." (emphasis added). Similarly, the Office again states: "[s]uch a clear layout, along with proper motivation for creating a better *efficient* data structure would make for the combination of Dowling and Goldman to be valid and based on adequate motivation." (emphasis added).

Appellant respectfully submits that upon close inspection, this statement fails to indicate any motivation at all and simply suggests that a "proper motivation" to combine would be "valid and based on adequate motivation."

Finally, the references fail to disclose or suggest all of the claim features. Specifically, as explained above, Goldman's description and usage of "hierarchy" is not even suggestive of "hierarchical tree structures comprising multiple nodes that represent physical or logical location" as recited in this claim. Furthermore, the Office's reliance on figure 37 and column 38 of Goldman is misplaced because these portions only involve *creating* an information model. (see column 38, line 29). In this respect, the Goldman disclosure is only directed to systems and methods that process information associated with a database so that the information can be *presented* for viewing by a user, and not to

determining a “location” of a device or “traversing at least one node on the one or more hierarchical tree structures to ascertain a device location”.

In view of the above discussion, the Office has not established a *prima facie* case of obviousness and has made an improper rejection. Hence, for at least these reasons, the rejection of Claim 2 should be reversed.

Claims 3-7 and 9-19 depend from Claim 2 either directly or indirectly and are distinguishable over the proposed combination of Dowling and Goldman for at least the reasons set forth above regarding Claim 2.

Claim 20 recites a method of operating a portable computing device comprising:

- determining a location of the portable computing device by accessing one or more hierarchical tree structures comprising multiple nodes that represent physical or logical locations; and traversing at least one node on the one or more hierarchical tree structures to ascertain a device location;
- acquiring one or more applets associated with the determined location; and
- locally executing the one or more applets sufficient to interact with a location environment.

Similar to the rejection of Claim 2 discussed above, in the final rejection of Claim 20, the Office asserts that Dowling discloses the subject matter of the claim, except that “Dowling does not disclose that these databases are hierarchical tree structures, wherein nodes would be traversed to access the information concerning the device location...” (Office Action, page 6). The Office further asserts that Goldman discloses “creating and using an organized hierarchical structure with nodes representing location based information,

wherein the tree would be traversed to access a specific node containing information that is needed.” Thus, the Office argues that it would be obvious to incorporate Goldman’s teaching in Dowling’s system to render the claimed subject matter obvious since Dowling discloses using “some kind of database storage structure” (Office Action, page 6) and that Goldman teaches taking a database and using a hierarchical structure to provide a better organized structure where information can be easily accessed.

In its Appeal Brief, filed July 19, 2004, Appellant respectfully disagreed with the interpretation and application of the references set forth in the rejection, and further submitted that the rejection fails to establish a *prima facie* case of obviousness. Specifically, Appellant submitted that the Office’s stated motivation to combine the references was deficient and that the references do not teach or suggest all of the claim’s features. Appellant maintains its position.

In the Examiner’s Answer, mailed April 28, 2005, the Office maintains its rejection and responds to Appellant’s arguments by further characterizing Dowling and Goldman.

Specifically, regarding Dowling, the Office argues that the only feature not taught is “the backend structure of the database”. The Office then argues that Goldman discloses a hierarchical data structure with multiple nodes that represent physical or logical locations. The Office then states: “Goldman further discloses that this database mechanism is created and a data model is formed to organize data, wherein this organization would be beneficial to such a system as Dowling that deals with large amounts of data.” The Office then refers to Figure 37 and column 38, lines 30-60, of Goldman and argues that the embodiment

illustrated and described therein “clearly shows how this hierarchical tree structure stores physical or logical location nodes, and this tree would be traversed to access these location and location data.” The Office then refers to column 41, lines 34-35, which states “[t]he result of an information model is both an easy way to organize and access an information repository.” The Office relies on this statement as motivation to combine Goldman with Dowling by arguing “Goldman is beneficial for creating a information model that is both an easy way to organize and access an information repository, wherein this is clearly a motivation that such a system as Dowling with large amounts of data can rely on to implement Goldman’s data structure.”

The Office further suggests that Figure 37 and column 38 illustrate how Goldman uses its data structure “to lay out an example much like Dowling’s system, by explaining how this data structure can be used to hold hierarchical location nodes that can be traversed to extract specific node information based on location of a device” (the Office offers no support for the alleged similarity of this example to the Dowling system). The Office then reasons that “[s]uch a clear layout, along with proper motivation for creating a better efficient data structure would make for the combination of Dowling and Goldman to be valid and based on adequate motivation.”

Appellant respectfully disagrees with the Examiner’s Answer and reminds the Office that, as noted above, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

Here, Dowling and Goldman contain no such suggestion or motivation. Furthermore, the Office bears the burden of explaining “why the combination of the teachings is proper.” (MPEP 2142). Here, the Office’s only attempt at such an explanation is to state that Dowling discloses using “some kind of database storage structure to store and access the information necessary to access and display the service information to a user.” The Office then suggests that Goldman teaches using a hierarchical structure on such a database “wherein this hierarchical structure would provide a *better-organized structure*, with a *meaningful organizational method*, wherein the information can be traversed more *efficiently* and the information can be easily accessed (column 5, lines 37-40).” (emphasis added).

Appellant submits that, upon close examination, the Office’s stated motivation merely involves improving *efficiency*, which is too general because it could cover almost any alteration to any database (e.g. implementing relational tables, increasing available memory or processing resources, using SQL or creating a look-up table). Additionally, providing a “*better-organized structure*” with a “*meaningful organizational method*” is too general because databases themselves are meaningful organizational methods and are commonly defined as “a collection of data arranged for ease and speed of retrieval, as by a computer.” (Webster’s II Dictionary, 1988). Furthermore, the stated motivation merely recites the Goldman disclosure and fails to explain *why* the combination is proper (the Office expressly cites column 5, lines 37-40, of Goldman). Accordingly, as demonstrated by the Office’s own guidance given above, the rejection is improper.

Finally, the references fail to disclose or suggest all of the claim features. Specifically, as explained above, Goldman's description and usage of "hierarchy" is not even suggestive of "hierarchical tree structures comprising multiple nodes that represent physical or logical location", as recited in this claim. Furthermore, the Office's reliance on figure 37 and column 38 of Goldman is misplaced because they only involve *creating* an information model. (see column 38, line 29). In this respect, the Goldman disclosure is only directed to systems and methods that process information associated with a database so that the information can be *presented* for viewing by a user, and not to determining a "location" of a device or "traversing at least one node on the one or more hierarchical tree structures to ascertain a device location".

In view of the above discussion, the Office has not established a *prima facie* case of obviousness and has made an improper rejection. Hence, for at least these reasons, the rejection of Claim 20 should be reversed.

Claims 21-30 depend either directly or indirectly from Claim 20 and are distinguishable over the proposed combination of references for at least the same reasons set forth above regarding Claim 20.

Furthermore, in view of the lack of a *prima facie* case of obviousness with regard to Claim 20, it is further submitted that the additional teachings of Fulton are unable to render obvious Claim 22, which depends from Claim 20.

Claim 32 recites one or more computer-readable media having computer-readable instructions thereon which, when executed by a portable computer device, cause the computing device to:

- determine its location by accessing one or more hierarchical tree structures each of which comprising multiple nodes that represent physical or logical locations, and traversing at least one node on the one or more hierarchical tree structures to ascertain a device location;
- generate a service query that is configured to identify services that are associated with the location;
- wirelessly send the query to one or more servers;
- receive a response from the one or more servers that contains digital data associated with applets that can be executed by the device and that provide a location-specific service; and
- locally execute the one or more applets to interact with a location environment.

In making out the final rejection of Claim 32, the Office asserts that Dowling discloses the subject matter of the claim, except that “Dowling does not disclose that these databases are hierarchical tree structures, wherein nodes would be traversed to access the information concerning the device location...” (Office Action, page 8). The Office then argues that Goldman discloses “creating and using an organized hierarchical structure with nodes representing location based information, wherein the tree would be traversed to access a specific node containing information that is needed.” Thus, the Office asserts that Goldman’s teaching combined with Dowling’s system would render the claimed subject matter obvious since Dowling discloses using “some kind of database storage structure” (Office Action, pages 8 and 9) and that Goldman teaches taking a database and using a hierarchical structure to provide a better organized structure where information can be easily accessed.

In its Appeal Brief, filed July 19, 2004, Appellant respectfully disagreed with the interpretation and application of the references set forth in the rejection, and further submitted that the rejection fails to establish a *prima facie* case of

obviousness. Specifically, Appellant submitted that the Office's stated motivation to combine the references was deficient and that the references do not teach or suggest all of the claim's features. Appellant maintains its position.

In the Examiner's Answer, mailed April 28, 2005, the Office maintains its rejection and responds to Appellant's arguments by further characterizing Dowling and Goldman.

Specifically, regarding Dowling, the Office argues that the only feature not taught is "the backend structure of the database". The Office then argues that Goldman discloses a hierarchical data structure with multiple nodes that represent physical or logical locations. The Office then states: "Goldman further discloses that this database mechanism is created and a data model is formed to organize data, wherein this organization would be beneficial to such a system as Dowling that deals with large amounts of data." The Office then refers to Figure 37 and column 38, lines 30-60, of Goldman and argues that the embodiment illustrated and described therein "clearly shows how this hierarchical tree structure stores physical or logical location nodes, and this tree would be traversed to access these location and location data." The Office then refers to column 41, lines 34-35, which states "[t]he result of an information model is both an easy way to organize and access an information repository." The Office relies on this statement as motivation to combine Goldman with Dowling by arguing "Goldman is beneficial for creating a information model that is both an easy way to organize and access an information repository, wherein this is clearly a motivation that such a system as Dowling with large amounts of data can rely on to implement Goldman's data structure."

The Office further suggests that Figure 37 and column 38 illustrate how Goldman uses its data structure “to lay out an example much like Dowling’s system, by explaining how this data structure can be used to hold hierarchical location nodes that can be traversed to extract specific node information based on location of a device” (the Office offers no support for the alleged similarity of this example to the Dowling system). The Office then reasons that “[s]uch a clear layout, along with proper motivation for creating a better efficient data structure would make for the combination of Dowling and Goldman to be valid and based on adequate motivation.”

Appellant respectfully disagrees with the Examiner’s Answer and reminds the Office that, as noted above, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

Here, Dowling and Goldman contain no such suggestion or motivation. Furthermore, the Office bears the burden of explaining “why the combination of the teachings is proper.” (MPEP 2142). Here, the Office’s only attempt at such an explanation is to state that Dowling discloses using “some kind of database storage structure to store and access the information necessary to access and display the service information to a user.” The Office then suggests that Goldman teaches using a hierarchical structure on such a database “wherein this hierarchical structure would provide a *better-organized structure*, with a *meaningful organizational method*, wherein the information can be traversed

more *efficiently* and the information can be easily accessed (column 5, lines 37-40).” (emphasis added).

Appellant submits that, upon close examination, the Office’s stated motivation merely involves improving *efficiency*, which is too general because it could cover almost any alteration to any database (e.g. implementing relational tables, increasing available memory or processing resources, using SQL or creating a look-up table). Additionally, providing a “*better-organized structure*” with a “*meaningful organizational method*” is too general because databases themselves are meaningful organizational methods and are commonly defined as “a collection of data arranged for ease and speed of retrieval, as by a computer.” (Webster’s II Dictionary, 1988).

Furthermore, the stated motivation merely recites the Goldman disclosure and fails to explain *why* the combination is proper (the Office expressly cites column 5, lines 37-40, of Goldman). Accordingly, as demonstrated by the Office’s own guidance given above, the rejection is improper.

Finally, the references fail to disclose or suggest all of the claim features. Specifically, as explained above, Goldman’s description and usage of “hierarchy” is not even suggestive of “one or more hierarchical tree structures each of which comprising multiple nodes that represent physical or logical locations”, as recited in this claim. Furthermore, the Office’s reliance on figure 37 and column 38 of Goldman is misplaced because they only involve *creating* an information model. (see column 38, line 29). In this respect, the Goldman disclosure is only directed to systems and methods that process information associated with a database so that the information can be *presented* for viewing

by a user, and not to determining a “location” of a device or “traversing at least one node on the one or more hierarchical tree structures to ascertain a device location”.

In view of the above discussion, the Office has not established a *prima facie* case of obviousness and has made an improper rejection. Hence, for at least these reasons, the rejection of Claim 32 should be reversed.

Claims 33-39 depend either directly or indirectly from Claim 32 and are distinguishable over the proposed combination of references for at least the same reasons set forth above regarding Claim 32.

Furthermore, in view of the lack of a *prima facie* case of obviousness with regard to Claim 32, it is further submitted that the additional teachings of Fulton are unable to render obvious Claim 37, which depends from Claim 32.

Claim 41 recites a computer architecture comprising:

- a location service module configured to wirelessly receive location information and ascertain a location associated with the location information by accessing one or more hierarchical tree structures each of which comprising multiple nodes that represent physical or logical locations and traversing at least one node on the one or more hierarchical tree structures to ascertain a device location; and
- an applet manager operably associated with the location service module and configured to receive and manage applets that can be wirelessly received and that pertain to a location that is ascertained by the location service module, the applets being configured to enable a user of a computer device to interact with a location environment.

In making out the final rejection of Claim 41, the Office asserts that Dowling discloses the subject matter of the claim, except that “Dowling does not

disclose that these databases are hierarchical tree structures, wherein nodes would be traversed to access the information concerning the device location...” (Office Action, page 10). The Office then argues that Goldman discloses “creating and using an organized hierarchical structure with nodes representing location based information, wherein the tree would be traversed to access a specific node containing information that is needed.” Thus, the Office asserts that Goldman’s teaching combined with Dowling’s system would render the claimed subject matter obvious since Dowling discloses using “some kind of database storage structure” (Office Action, pages 10 and 11) and that Goldman teaches taking a database and using a hierarchical structure to provide a better organized structure where information can be easily accessed.

In its Appeal Brief, filed July 19, 2004, Appellant respectfully disagreed with the interpretation and application of the references set forth in the rejection, and further submitted that the rejection fails to establish a *prima facie* case of obviousness. Specifically, Appellant submitted that the Office’s stated motivation to combine the references was deficient and that the references do not teach or suggest all of the claim’s features. Appellant maintains its position.

In the Examiner’s Answer, mailed April 28, 2005, the Office maintains its rejection and responds to Appellant’s arguments by further characterizing Dowling and Goldman.

Specifically, regarding Dowling, the Office argues that the only feature not taught is “the backend structure of the database”. The Office then argues that Goldman discloses a hierarchical data structure with multiple nodes that represent physical or logical locations. The Office then states: “Goldman further

discloses that this database mechanism is created and a data model is formed to organize data, wherein this organization would be beneficial to such a system as Dowling that deals with large amounts of data.” The Office then refers to Figure 37 and column 38, lines 30-60, of Goldman and argues that the embodiment illustrated and described therein “clearly shows how this hierarchical tree structure stores physical or logical location nodes, and this tree would be traversed to access these location and location data.” The Office then refers to column 41; lines 34-35, which states “[t]he result of an information model is both an easy way to organize and access an information repository.” The Office relies on this statement as motivation to combine Goldman with Dowling by arguing “Goldman is beneficial for creating a information model that is both an easy way to organize and access an information repository, wherein this is clearly a motivation that such a system as Dowling with large amounts of data can rely on to implement Goldman’s data structure.”

The Office further suggests that Figure 37 and column 38 illustrate how Goldman uses its data structure “to lay out an example much like Dowling’s system, by explaining how this data structure can be used to hold hierarchical location nodes that can be traversed to extract specific node information based on location of a device” (the Office offers no support for the alleged similarity of this example to the Dowling system). The Office then reasons that “[s]uch a clear layout, along with proper motivation for creating a better efficient data structure would make for the combination of Dowling and Goldman to be valid and based on adequate motivation.”

Appellant respectfully disagrees with the Examiner's Answer and reminds the Office that, as noted above, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

Here, Dowling and Goldman contain no such suggestion or motivation. Furthermore, the Office bears the burden of explaining "why the combination of the teachings is proper." (MPEP 2142). Here, the Office's only attempt at such an explanation is to state that Dowling discloses using "some kind of database storage structure to store and access the information necessary to access and display the service information to a user." The Office then suggests that Goldman teaches using a hierarchical structure on such a database "wherein this hierarchical structure would provide a *better-organized structure*, with a *meaningful organizational method*, wherein the information can be traversed more *efficiently* and the information can be easily accessed (column 5, lines 37-40)." (emphasis added).

Appellant submits that, upon close examination, the Office's stated motivation merely involves improving *efficiency*, which is too general because it could cover almost any alteration to any database (e.g. implementing relational tables, increasing available memory or processing resources, using SQL or creating a look-up table). Additionally, providing a "*better-organized structure*" with a "*meaningful organizational method*" is too general because databases themselves are meaningful organizational methods and are commonly defined as "a collection of data arranged for ease and speed of retrieval, as by a computer."

(Webster's II Dictionary, 1988). Furthermore, the stated motivation merely recites the Goldman disclosure and fails to explain *why* the combination is proper (the Office expressly cites column 5, lines 37-40, of Goldman). Accordingly, as demonstrated by the Office's own guidance given above, the rejection is improper.

Finally, the references fail to disclose or suggest all of the claim features. Specifically, as explained above, Goldman's description and usage of "hierarchy" is not even suggestive of a "location service module configured to wirelessly receive location information and ascertain a location associated with the location information by accessing one or more hierarchical tree structures each of which comprising multiple nodes that represent physical or logical locations" as recited in this claim. Furthermore, the Office's reliance on figure 37 and column 38 of Goldman is misplaced because they only involve *creating* an information model. (see column 38, line 29). In this respect, the Goldman disclosure is only directed to systems and methods that process information associated with a database so that the information can be *presented* for viewing by a user, and not a location module that further traverses "at least one node on the one or more hierarchical tree structures to ascertain a device location."

In view of the above discussion, the Office has not established a *prima facie* case of obviousness and has made an improper rejection. Hence, for at least these reasons, the rejection of Claim 41 should be reversed.

Claims 42-46 depend from Claim 41, and are therefore distinguishable over the proposed combination of references for at least the reasons set forth above regarding Claim 41.

Claim 48 recites a handheld computing device comprising:

- a location service module configured to receive location information and ascertain a location associated with the location information by accessing one or more hierarchical tree structures each of which comprising multiple nodes that represent physical or logical locations, and traversing at least one node on the one or more hierarchical tree structures to ascertain a device location;
- an applet manager operably associated with the location service module and configured to receive and manage applets that can be wirelessly received and that pertain to a location that is ascertained by the location service module;
- an applet runtime environment in which applets that are received can execute to enable a user of the device to interact with a location environment;
- an applet cache in which applets can be cached for use in connection with an ascertained location; and
- a network component configured to establish wireless communication with a network so that applets can be wirelessly received.

In making out the final rejection of Claim 48, the Office asserts that Dowling discloses the subject matter of the claim, except that “Dowling does not disclose that these databases are hierarchical tree structures, wherein nodes would be traversed to access the information concerning the device location...” (Office Action, page 12). The Office then argues that Goldman discloses “creating and using an organized hierarchical structure with nodes representing location based information, wherein the tree would be traversed to access a specific node containing information that is needed.” Thus, the Office asserts that Goldman’s teaching combined with Dowling’s system would render the claimed subject matter obvious since Dowling discloses using “some kind of database storage structure” (Office Action, pages 12) and that Goldman teaches

taking a database and using a hierarchical structure to provide a better organized structure where information can be easily accessed.

In its Appeal Brief, filed July 19, 2004, Appellant respectfully disagreed with the interpretation and application of the references set forth in the rejection, and further submitted that the rejection fails to establish a *prima facie* case of obviousness. Specifically, Appellant submitted that the Office's stated motivation to combine the references was deficient and that the references do not teach or suggest all of the claim's features. Appellant maintains its position.

In the Examiner's Answer, mailed April 28, 2005, the Office maintains its rejection and responds to Appellant's arguments by further characterizing Dowling and Goldman.

Specifically, regarding Dowling, the Office argues that the only feature not taught is "the backend structure of the database". The Office then argues that Goldman discloses a hierarchical data structure with multiple nodes that represent physical or logical locations. The Office then states: "Goldman further discloses that this database mechanism is created and a data model is formed to organize data, wherein this organization would be beneficial to such a system as Dowling that deals with large amounts of data." The Office then refers to Figure 37 and column 38, lines 30-60, of Goldman and argues that the embodiment illustrated and described therein "clearly shows how this hierarchical tree structure stores physical or logical location nodes, and this tree would be traversed to access these location and location data." The Office then refers to column 41, lines 34-35, which states "[t]he result of an information model is both an easy way to organize and access an information repository." The Office relies

on this statement as motivation to combine Goldman with Dowling by arguing “Goldman is beneficial for creating a information model that is both an easy way to organize and access an information repository, wherein this is clearly a motivation that such a system as Dowling with large amounts of data can rely on to implement Goldman’s data structure.”

The Office further suggests that Figure 37 and column 38 illustrate how Goldman uses its data structure “to lay out an example much like Dowling’s system, by explaining how this data structure can be used to hold hierarchical location nodes that can be traversed to extract specific node information based on location of a device” (the Office offers no support for the alleged similarity of this example to the Dowling system). The Office then reasons that “[s]uch a clear layout, along with proper motivation for creating a better efficient data structure would make for the combination of Dowling and Goldman to be valid and based on adequate motivation.”

Appellant respectfully disagrees with the Examiner’s Answer and reminds the Office that, as noted above, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

Here, Dowling and Goldman contain no such suggestion or motivation. Furthermore, the Office bears the burden of explaining “why the combination of the teachings is proper.” (MPEP 2142). Here, the Office’s only attempt at such an explanation is to state that Dowling discloses using “some kind of database storage structure to store and access the information necessary to access and

display the service information to a user.” The Office then suggests that Goldman teaches using a hierarchical structure on such a database “wherein this hierarchical structure would provide a *better-organized structure*, with a *meaningful organizational method*, wherein the information can be traversed more *efficiently* and the information can be easily accessed (column 5, lines 37-40).” (emphasis added).

Appellant submits that, upon close examination, the Office’s stated motivation merely involves improving *efficiency*, which is too general because it could cover almost any alteration to any database (e.g. implementing relational tables, increasing available memory or processing resources, using SQL or creating a look-up table). Additionally, providing a “*better-organized structure*” with a “*meaningful organizational method*” is too general because databases themselves are meaningful organizational methods and are commonly defined as “a collection of data arranged for ease and speed of retrieval, as by a computer.” (Webster’s II Dictionary, 1988). Furthermore, the stated motivation merely recites the Goldman disclosure and fails to explain *why* the combination is proper (the Office expressly cites column 5, lines 37-40, of Goldman). Accordingly, as demonstrated by the Office’s own guidance given above, the rejection is improper.

Finally, the references fail to disclose or suggest all of the claim features. Specifically, as explained above, Goldman’s description and usage of “hierarchy” is not even suggestive of a “location service module configured to receive location information and ascertain a location associated with the location information by accessing one or more hierarchical tree structures each of which

comprising multiple nodes that represent physical or logical locations”, as recited in this claim. Furthermore, the Office’s reliance on figure 37 and column 38 of Goldman is misplaced because they only involve *creating* an information model. (see column 38, line 29). In this respect, the Goldman disclosure is only directed to systems and methods that process information associated with a database so that the information can be *presented* for viewing by a user, and not to a location service module that further traverses “at least one node on the one or more hierarchical tree structures to ascertain a device location”.

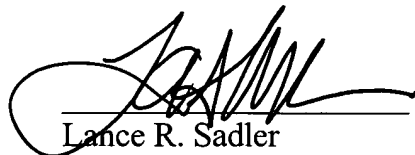
In view of the above discussion, the Office has not established a *prima facie* case of obviousness and has made an improper rejection. Hence, for at least these reasons, the rejection of Claim 48 should be reversed.

Conclusion

For at least the reasons provided above, it is respectfully submitted that the rejections set forth in the Final Office Action of January 28, 2004, in connection with the subject application should be reversed. Favorable consideration of this Reply Brief is respectfully requested.

Respectfully submitted,

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